

## Claims

What is claimed is:

1. A method of a speculative tracing, comprising:
  - defining the speculative tracing using a plurality of probes;
  - firing at least one of the plurality of probes defined by the speculative tracing;
  - allocating at least one instance of a first speculative buffer arranged to transfer data to a first principal buffer, if one of the plurality of probes comprises a first speculation function; and
  - determining a first state value associated with the first speculative buffer.
2. The method according to claim 1, wherein the first state value comprises at least one of a group consisting of a speculate-one state, a speculate-many state, a commit-one state, a commit-many state, and a discard state.
3. The method according to claim 2, wherein the speculate-one state corresponds to firing one of the plurality of probes comprising a first speculate function on a first processor.
4. The method according to claim 2, wherein the speculate-many state corresponds to firing one of the plurality of probes comprising a second speculate function on a second processor.
5. The method according to claim 1, wherein a second instance of the first speculative buffer is arranged to transfer data to a second principal buffer.
6. The method according to claim 2, wherein the commit-one state corresponds to firing one of the plurality of probes comprising a commit function.
7. The method according to claim 2, wherein the commit-many state corresponds to firing one of the plurality of probes comprising a commit function.

8. The method according to claim 2, wherein the discard state corresponds to firing one of the plurality of probes comprising a discard function.
9. The method according to claim 1, further comprising:  
modifying a size of the first speculative buffer.
10. The method according to claim 1, further comprising:  
incrementing a drop counter for a speculative drop of data in the first speculative buffer.
11. The method according to claim 10, wherein the speculative drop corresponds to failing to transfer the data from the first speculative buffer.
12. The method according to claim 10, wherein the speculative drop corresponds to failing to store the data in the first speculative buffer.
13. The method according to claim 1, further comprising:  
executing a cleaning operation for each speculative buffer associated with the first processor.
14. The method according to claim 13, wherein the cleaning operation occurs at a specified cleaning rate.
15. The method according to claim 13, wherein the cleaning operation comprises resetting the first speculative buffer.
16. The method according to claim 1, further comprising:  
allocating a second speculative buffer arranged to transfer data to the first principal buffer, if one of the plurality of probes comprising a second speculation function fires on a second processor; and  
determining a second state value of the of the second speculative buffer.

17. A system for a speculative tracing using a tracing framework, comprising:
- a first principal buffer configured to store data from the tracing framework and associated with a first processor;
  - a first instance of a first speculative buffer associated with the first principal buffer and configured to transfer data to the first principal buffer, wherein the first speculative buffer has a first state value associated therewith; and
  - a plurality of probes defining the speculative tracing executing on the tracing framework;
- wherein the first state value is updated upon firing at least one of the plurality of probes.
18. The system according to claim 17, wherein the first state value comprises at least one of a group consisting of an active state, a speculate-one state, a speculate-many state, a commit-one state, a commit-many state and a discard state.
19. The system according to claim 18, wherein the active state corresponds to firing one of the plurality of probes comprising a first speculation function.
20. The system according to claim 18, wherein the speculate-one state corresponds to firing one of the plurality of probes comprising a first speculate function.
21. The system according to claim 18, wherein the speculate-many state corresponds to firing one of the plurality of probes comprising a second speculate function on a second processor.
22. The system according to claim 21, further comprising:
- a second principal buffer configured to store data from the tracing framework and associated with the second processor, wherein a second instance of the first speculative buffer is associated with the second principal buffer and configured to transfer data to the second principal buffer.

23. The system according to claim 18, wherein the commit-one state corresponds to firing one of the plurality of probes comprising a commit function.
24. The system according to claim 18, wherein the commit-many state corresponds to firing one of the plurality of probes comprising a commit function.
25. The system according to claim 18, wherein the discard state corresponds to firing one of the plurality of probes comprising a discard function.
26. The system according to claim 17, wherein a size of the first speculative buffer is configurable.
27. The system according to claim 17, further comprising:
  - a drop counter for incrementing a speculative drop of data in the first speculative buffer.
28. The system according to claim 17, further comprising:
  - a second speculative buffer associated with the first principal buffer and configured to store data and transfer data to the first principal buffer, wherein second speculative buffer has a second state value associated therewith;
  - wherein the second state value is updated upon firing at least one of the plurality of probes.
29. The system according to claim 28, wherein the first instance of the first speculative buffer and second speculative buffer are located in respective cells of an array.
30. The system according to claim 28, wherein the second state value comprises at least one of a group consisting of an active, a speculate-one state, speculate-many state, commit state, and commit-many state, and a discard state.

31. The system according to claim 30, wherein the active state corresponds to firing one of the plurality of probes comprising a second speculation function.

32. A computer system for a speculative tracing comprising:

a first processor;

a memory;

a storage device; and

software instructions stored in the memory for enabling the computer system to:

define the speculative tracing using a plurality of probes;

fire at least one of the plurality of probes defined by the speculative tracing;

allocate at least one instance of a first speculative buffer arranged to transfer data to a first principal buffer, if one of the plurality of probes comprises a first speculation function; and

determine a first state value associated with the first speculative buffer.

33. The computer system of claim 32, further comprising software instructions stored in the memory for enabling the computer system to:

allocate a second speculative buffer arranged to transfer data to the first principal buffer, if one of the plurality of probes comprising a second speculation function fires on the first processor; and

determine a second state value of the second speculative buffer.